

**LIVESTOCK
NEONATAL DIARRHEA KIT**
Revised 2006

This kit is designed to improve the chances of making an etiologic diagnosis in cases of neonatal diarrhea. It is primarily for use in calves, but can be used for pigs, lambs and foals.

The proper selection of an affected animal is imperative in making a herd diagnosis. Ideally, samples should be collected from a fresh, **untreated** animal that dies in the acute stages of the disease. In severe herd outbreaks, euthanasia of an acutely ill animal instead of treatment should be considered.

The Diagnostic Laboratory will perform age appropriate tests that may include: histopathology, bacteriology, electron microscopic evaluation, parasitology and IgG level determination.. Additional tests should be requested by the submitting veterinarian on the SV43. In some cases, the pathologist will order additional tests to arrive at a definitive diagnosis.

TEST SELECTION:

The specific laboratory procedures to be performed on specimens from neonatal scouring calves are dictated by the **age** of the calf at the onset of diarrhea and the clinical history. The following are general recommendations.

1. **Serum IgG (1):**
This should be done on scouring neonates up to 7 days of age to assess passive transfer of immunoglobulins.
2. **Bacteria:**
The major bacteria involved in neonatal scours can be detected by routine culture. Calves **5 days or less** should also be evaluated by the ELISA test for K-99 *E. coli*. Some bacterial etiologies (attaching and effacing *E. coli* enterotoxemia) require histologic examination for diagnosis. Salmonella cultures are routinely done. Clostridial enteropathy suspects will have gram stains performed on intestinal contents and if high numbers are identified, anaerobic cultures will be performed for genotyping if needed.
3. **Viruses:**
The most common viral causes of neonatal scours are rotavirus and coronavirus. Both can be detected by electron microscopy. The FA test for coronavirus (only done on multiple sections of fresh colon) is more sensitive and specific. Virus isolation is **not** performed for rota/coronaviruses.

A variety of procedures are performed for the detection of BVD virus, if specifically requested. All the recommended tissues stated on the back page **must** be submitted. BVD test is utilized for identification of persistently infected calves, and a portion of skin of ear is recommended.
4. **Cryptosporidia:**
Cryptosporidia is typically seen in calves **over 5 days** of age. A direct smear of intestinal contents or a scraping of the mucosa of the ileum are the specimens of choice.
5. **Coccidia:**
Coccidiosis typically occurs in calves over 10 days of age. A fecal sample or a scraping of the mucosa of the ileum is necessary.

See other side for addition information. (Page 2)

CONTENTS OF KIT:

1. Four small Whirl-pak ® bags
2. Two large Whirl-pak ® bags
3. Bottle with 10% formalin
4. Red top tube
5. Fecal container
6. Form SV43 for neonatal diarrhea in Whirl-pak ®
(Gel packs and absorbent padding are **NOT** included).

INSTRUCTIONS:

1. Collect 5-10ml of blood from the larger veins or heart in red top tube.
2. Collect 1-5 grams of fecal contents in the screw top container.
3. Place red top tube and container with fecal contents in a labeled small Whirl-pak bag.
4. Collect a mesenteric lymph node, 2-inch sections of lung, liver and spleen and place into a small Whirl-pak. Label Whirl-pak with tissue identification, owner's name and animal identification.
5. Collect 3-inch segments of ileum and colon and place each into separate, labeled Whirl-pak bags. Label Whirl-pak bags as in #4.
6. Place both small Whirl-pak bags of fresh tissues into larger Whirl-pak.
7. Collect 1/2 -inch cubes of lung, liver, heart, spleen, kidney, jejunum, ileum, colon (2 sections) and mesenteric lymph node and place in formalin. Place formalin bottle in large Whirl-pak. ***Tissue fixed at the time of necropsy is the best method for meaningful histologic examination.***
8. Fill out the enclosed laboratory request form (SV43) being sure to include **AGE OF THE CALF**, herd morbidity, herd mortality, treatment and response. Check desired tests (usually Neonatal diarrhea study). Place form into large Whirl-pak.
9. Refrigerate, **DO NO FREEZE** and ship immediately to the laboratory.
10. **CNS disease:** Submit refrigerated fresh whole brain.
11. **Enterotoxemia:** Submit 30 cc of intestinal content in a clean container (refrigerate). **Do not** submit a tied off loop of intestine. The toxin of enterotoxemia is unstable. Microscopic examination of properly fixed tissues may be the only method of diagnosis.

US postal address:

Montana Veterinary Diagnostic Laboratory
PO Box 997
Bozeman, MT 59771

UPS, Federal Express, or Greyhound to address:

Montana Veterinary Diagnostic Laboratory
S. 19th and Lincoln
Bozeman, MT 59718

Phone: 406-994-4885